CLAIMS

1. A method for controlling the operation of a power generator, comprising:

receiving a plurality of fault status signals from a sputtering system within a period of time;

processing the plurality of fault status signals with a fault handling algorithm; and

generating at least one command signal for affecting operating characteristics of a power generator.

2. The method of claim 1 further comprising modifying parameters of the fault handling algorithm during operation of the power generator.

3. The method of claim 2, wherein the parameters of the fault handling algorithm are modified without recompiling source code.

4. The method of claim 1, wherein the step of processing comprises performing linear algebra computations.

5. The method of claim 1, wherein the step of processing comprises performing mathematical operations.

6. The method of claim 5, wherein the mathematical operations are selected from the group consisting of AND, OR, XOR, NOT, multiplication, addition, subtraction, division, equal to, greater than, less than, not equal to, greater than or equal to, less than or equal to, maximum, and minimum.

7. The method of claim 1 further comprising storing the fault handling algorithm in a memory.

8. The method of claim 1 further comprising retrieving the fault handling algorithm from a memory.

9. The method of claim 1, wherein the at least one command signal comprises a plurality of command signals.

10. The method of claim 9, wherein the plurality of command signals are simultaneously generated.

11. The method of claim 1, wherein the plurality of fault status signals are simultaneously processed with the fault handling algorithm.

12. The method of claim 1, wherein the power generator is a DC power generator.

13. The method of claim 1, wherein the power generator is an RF power generator.

14. The method of claim 1, wherein the plurality of fault status signals correspond to one or more fault types.

15. A fault handling system for controlling a power generator of a sputtering system, the fault handling system comprising:

a processor in signal communication with the power generator for receiving a plurality of fault status signals from the sputtering system within a period of time, the processor generating at least one command signal for affecting operating characteristics of the power generator by

processing the plurality of fault status signals with a fault handling algorithm.

16. The fault handling system of claim 15, wherein parameters of the fault handling algorithm are specified by an operator during operation of the sputtering system.

17. The fault handling system of claim 15, wherein modifying parameters of the fault handling algorithm does not require recompilation of source code.

18. The fault handling system of claim 15, wherein processing comprises performing linear algebra computations.

19. The fault handling system of claim 15, wherein processing comprises performing mathematical operations.

20. The fault handling system of claim 19, wherein the mathematical operations are selected from the group consisting of AND, OR, XOR, NOT, multiplication, addition, subtraction, and division, equal to, greater than, less than, not equal to, greater than or equal to, less than or equal to, maximum, and minimum.

21. The fault handling system of claim 15, wherein the processor is a component in the power generator.

22. The fault handling system of claim 15 further comprising a memory for storing the fault handling algorithm.

23. The fault handling system of claim 15, wherein the plurality of fault status signals is a vector of signals.

24. The fault handling system of claim 15, wherein a plurality of command signals are generated by the processor.

25. The fault handling system of claim 24, wherein the plurality of command signals are simultaneously generated.

26. The fault handling system of claim 15, wherein the plurality of fault status signals are simultaneously processed with the fault handling algorithm.

27. The fault handling system of claim 15 further comprising a user interface for modifying the fault handling algorithm, the user interface in signal communication with the processor.

28. The fault handling system of claim 15, wherein the fault handling system controls the power generator.

29. The fault handling system of claim 15, wherein the power generator is a DC power generator.

30. The fault handling system of claim 15, wherein the power generator is an RF power generator.

31. The fault handling system of claim 15, wherein the operating characteristics are selected from the group consisting of system output disable, power block output disable, output enable prevent, and output drive rollback percentage.

32. The fault handling system of claim 15, wherein the fault status signals correspond to one or more fault types.

33. A fault handling system for controlling a power generator of a sputtering system, the fault handling system comprising:

a means for receiving a plurality of fault status signals from the sputtering system within a period of time and a means for generating at least one command signal for affecting operating characteristics of the power generator based upon the plurality of fault status signals and a fault handling algorithm.